In the Claims:

I Claim:

1. An optical switch, comprising:

A first waveguide holding member and a second waveguide holding member disposed over a substrate, wherein said first waveguide holding member moves relative to said second waveguide holding member; and

at least one movement guiding member which guides the motion of said first waveguide holding member.

2. An optical switch as recited in claim 1, wherein said second waveguide holding member is stationary relative to said substrate.

3. An optical switch as recited in claim 1, wherein said second wavguide holding member moves relative to said substrate.

4. An optical switch as recited in claim 1, wherein said first waveguide holding member moves transversely relative to said second waveguide holding member.

5. An optical switch as recited in claim 1, wherein said second waveguide holding member moves longitudinally relative to said first waveguide holding member.

6. An optical device as recited in claim 5, wherein said transverse movement of said first

waveguide holding member selectively couples at least one waveguide of said first waveguide holding member to at least one waveguide of said second waveguide holding member.

7. An optical switch as recited in claim 1, wherein each of said at least one movement guiding members further comprises a positioning member disposed between a pit and a groove.

8. An optical switch as recited in claim 1, wherein each of said at least one movement guiding members further comprises a positioning member disposed between a first groove and a second groove.

9. An optical switch as recited in claim 7, wherein said pit is disposed in said first waveguide holding member, and said groove is disposed in said substrate.

10. An optical switch as recited in claim 7, wherein said groove is disposed in said substrate and said pit is disposed in said first waveguide holding member.

11. An optical switch as recited in claim 1, wherein said second waveguide holding member moves transversely relative to said first waveguide holding member and at least one other movement guiding member guides said movement of said second waveguide holding member.

12. An optical switch as recited in claim 11, wherein each of said at least one other movement guiding members further comprises a positioning member disposed between a pit and a groove.

13. An optical switch as recited in claim 11, wherein each of said at least one other movement guiding members further comprises a positioning member disposed between a first groove and a second groove.

14. An optical switch as recited in claim 11, wherein said pit is disposed in said second waveguide holding member, and said groove is disposed in said substrate.

15. An optical switch as recited in claim 11, wherein said pit is disposed in said second waveguide holding member, and said groove is disposed in said substrate.

16. An optical device as recited in claim 1, wherein said second waveguide holding members each include an mxn array of waveguides, wherein $m \geq 1$ and $n \geq 0$.

17. An optical device as recited in claim 16, wherein said waveguides are chosen from the group consisting essentially of optical fibers and planar waveguides.

18. An optical switch, comprising:

A substrate having a first waveguide holding member and a second waveguide holding member disposed thereon, each of said first and second waveguide holding

members having at least three pits therein and each of said pits having a positioning member therein; and

at least two transverse grooves and at least two longitudinal grooves disposed in said substrate.

19. An optical switch as recited in claim 18, wherein said positioning members of said second waveguide holding member selectively engage said at least two transverse grooves.

20. An optical switch as recited in claim 18, wherein said positioning members of said first waveguide holding member selectively engage said at least two longitudinal grooves.

21. An optical switch as recited in claim 20, wherein said first waveguide holding member moves longitudinally to set a gap spacing between said first and said second waveguide holding members.

22. An optical switch as recited in claim 19, wherein said second waveguide holding member moves transversely along said at least two transverse grooves and said transverse movement selectively couples at least one waveguide of said first waveguide holding member to at least one waveguide of said second waveguide holding member.

23. An optical switch as recited in claim 19, wherein said second waveguide holding

member moves transversely along said at least two transverse grooves and said transverse movement selectively decouples at least one waveguide of said first waveguide holding member from at least one waveguide of said second waveguide holding member.

24. An optical switch, comprising:

A first waveguide holding member having at least two longitudinal grooves;

a second waveguide holding member having at least two transverse grooves; and

a substrate having at least three pits each having positioning members therein which engage said longitudinal grooves and at least three pits having positioning members therein which engage said transverse grooves.

25. An optical switch as recited in claim 24, wherein said first waveguide holding member moves longitudinally to set a gap spacing between said first and said second waveguide holding members.

26. An optical switch as recited in claim 24, wherein said second waveguide holding member moves transversely along said at least two transverse grooves and said transverse movement selectively couples at least one waveguide of said first waveguide holding member to at least one waveguide of said second waveguide holding member.

27. An optical switch as recited in claim 24, wherein said second waveguide holding

member moves transversely along said at least two transverse grooves and said transverse movement selectively decouples at least one waveguide of said first waveguide holding member to at least one waveguide of said second waveguide holding member.

28. An optical switch, comprising:

A substrate having at least one longitudinal groove and at least one transverse groove;

a first waveguide holding member having at least one transverse groove; and

a second waveguide holding member having at least one longitudinal groove.

29. An optical switch as recited in claim 28, wherein positioning members are disposed between each of said at least one longitudinal grooves in said substrate and each of said at least one longitudinal groove in said second waveguide holding member.

30. An optical switch as recited in claim 28, wherein positioning members are disposed between each of said at least one transverse grooves in said substrate and each of said at least one longitudinal groove in said first waveguide holding member.

31. An optical switch as recited in claim 28, wherein said substrate further includes at least one pit.

32. An optical switch as recited in claim 28, wherein said second waveguide holding member further includes as least one pit.

33. An optical switch as recited in claim 28, wherein said first waveguide holding member further includes as least one pit.

34. An optical switch, comprising:

At least one waveguide holding member disposed on a substrate;

at least two depressions disposed in each of said at least one wavguide holding members; and

at least two depressions disposed in said substrate, wherein at least three of said depressions are grooves and no two opposing depressions are pits.